Component 1 – Provide Expert Advice to Countries Affected by the Legacy of Uranium Sites and Reinforce Regional and International Cooperation in this Matter (Contract N°: 2011/268-525)

Coordination of regional efforts for remediation of Legacy Sites in Central Asia 2013-2015

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Background

CGULS Project was initiated in June 2012 on request of EC and IAEA MSs aiming the following:

- To facilitate establishing effective and sustainable measures in order to ensure adequate protection of the population and the environment from the harmful effects of the existing Uranium Production Legacy Sites (UPLS) in Central Asia and other countries.

- CGULS Strategic Action Plan, is the instrument to coordinate and synergize efforts on preparedness and implementation of the Remediation Programs in the affected MSs.

**Beneficiary Member States:**
Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, Russia, Ukraine

EC, EurAsEC and other Donors may also benefit from CGULS by more efficient implementation of their financial assistance to the remediation process.
Key project objectives of the activities to be developed via CGULS Strategic Action Plan

1. To **promote continuous cooperation** and common understanding among the affected countries, and between them and international stakeholders and potential donors.

2. To provide **expert services** and advice to Member States and international organizations in support of efforts to develop comprehensive environmental impact assessments and feasibility studies for legacy uranium production sites.

3. To provide **technical oversight and support in the field**.

4. Reinforcing the **regulatory framework** by supporting national and international initiatives consistent with IAEA Safety Standards.

The overall CGULS Objective is – to assist the affected MS in preparation the **National Long-term Strategies for Remediation of UPLS and provide assistance in efficient management and regulatory oversight** of the **Legacy Sites**.
Expected project impact:

For the regulators and the responsible site managers:
• Increase knowledge and understanding of Legacy site management issues.
• Increase capacity to manage Legacy sites
• More sustainable programs to manage Legacy issues
• Avoid the creation of future Legacy sites

For the regulators of UPLSs:
• More effective regulatory programs and regulatory staff
• Improved and harmonized regulatory provisions with best International practice

For the UPLS managers:
• Better planning, implementing and maintenance programs
• Increased technical and analytical abilities

For International Donors:
• Better prepared national infrastructure for efficient implementation of the Internationally funded projects
• More coordination and synergy of resources at the national and international levels
• Financial investment and technical assistance provided for Remediation are more protected and sustainable.
Milestones illustrative of the work done since beginning of CGULS activities

- **Coordination** and other actions in support of cooperation, harmonization, education and assistance to the MSs in remediation planning and safe Legacy Sites Management
  - 2 Annual CGULS Coordination Meetings (Vienna-2013, Issyk-Kul-2014);
  - 2 WG coordination meetings (EC-EurAsEC-MSs and IAEA) considering Minkush (KIG) and Taboshar-Degmai (TAD) Remediation initiatives and proposed projects (2014)

- **Support for expert’s missions** and the development of recommendations for the current and future development required for Remediation Strategies

- **Proficiency Tests** (2013) and expert analytical surveys were completed for all project relevant laboratories in a region, allowing preparation of strategic plans to further develop and improve analytical capacities.
  - Report and proposals to improve analytical capacities of the involved Labs in a region were discussed in Almaty in 2013.
  - Proposals for further technical capabilities based on the PT report were prepared for Tajikistan, Kyrgyzstan and Uzbekistan (2014)
Milestones illustrative of the work done since beginning of CGULS activities

- **Site specific Monitoring and Surveillance Plans** were developed for Kyrgyzstan, Tajikistan and Uzbekistan;

- At the request of the Kazakh Government a **Monitoring and Surveillance Plan for UPLS in Kazakhstan**, is now under development;

- An expert review of existing Regulatory framework documents which are in use in the CGULS MS (TAD, KIG, KAZ, RF and UA) resulting in the development of a concept for their improvement.

- A model for **Regulatory requirements and 9 guidelines documents, with specific focus on UPLS** is now under development. Consultancy meeting to discuss the latest drafts of these documents planned on 23-27 of March 2015. Draft will be ready for distribution before the next CGULS Annual Meeting in Tajikistan (June 2015).
Some deliverables examples

- Site Specific Hazards Characterization and Proposals for Further Remediation Strategies for Minkush, Mailuu Suu (KIG) and tailings “Karta-1-9” (Chkalovsk, TAD)

- Evaluation of the post Remediation state of the UPLS Remediated in Kazakhstan during 2001-2010

- Assessment of the existing Environment and Radiation Monitoring Programs in Tajikistan and Uzbekistan. Proposals and Monitoring and Surveillance programs Development.

- Gap-Analyses in the specific Regulatory documents in assistance to the Remediation Project Planning

- Prioritization of the Proposed Remediation Projects and relevant preparedness project activities for further Funding (Base-line documents (2015) and Donor’s Conference (2016))
Min-Kush Site Characterization, May and September 2013-2014

Reports prepared and submitted to the MS
Strategic Action Plan for Complex Remediation of Uranium Legacy Sites in Mailuu-Suu Kyrgyzstan

- No national strategy
- National infrastructure lacking – no clear roles and responsibilities
- No regular monitoring and surveillance programs
- Overall SA and EIA should be applied for these sites as a part of Feasibility Study and Long-term Remediation Strategy planning

Any “in-valley” or in situ remediation would only increase the lifetime costs of each remediated facility without offering a sustainable solution
Evaluation of the Recent Remediation Activities
Strategic Action Plan for Complex Remediation of Uranium Legacy Sites in Mailuu-Suu, Kyrgyzstan has been prepared and submitted to the Kyrgyz Government (May 2014)

Dam constructed at the TSF-3

View on new cover of TSF-6

Wetland area at the TSF-5

Riverbank protection measure at TSF-2 before (2006) and after Mud flood event 2013

TSF-15 is potential place for relocation of the TSF 2 and 13
Expert mission on request of Kazakh Government and consultancy on the Long-term Legacy Site management (October 2014)

- None of the sites are under proper regulatory control.
- Some sites show signs of deterioration of engineered covers and other previously completed remediation works.
- Significant hazards still exist at some sites already remediated under the 2001-2010 National program.
- Government supported National Strategy for Legacy Site Management is needed.
- The Regulator should take immediate actions to restore regulatory oversight at these sites.
- Operator control should be re-established and long-term site management should be planned and implemented at the previously remediated uranium legacy sites.

Report and Proposals were sent to the Ministry of Energy (February 2015)
Cooperation with FSD-Swiss Foundation for Mine Action, which have initiated several Remediation projects in Central Asia

• Decontamination of the surrounding contaminated lands around tailings damps “Karta-1-9” (Tajikistan) and restoration of the U-tailings capping.

• In agreement with NRSA and SE “Tajikredmet” and FSD CGULS experts will help in preparing design and expertise of the remediation project.

• FSD Ministry of Emergency Situations of Kyrgyzstan and FSD (27 01 2015) signed a Memorandum of Understanding and Cooperation in the field of waste management of the former mining production and support remediation (Sumsar and other sites).

• New initiatives from FSD on Satellite technology application in site characterization and Remediation planning.
Coordination and assistance to EC relevant projects

- Basic component of the IAEA activities are relevant to EC

- **REG4.01/10 “Establishment of a legislative and regulatory framework, regional watershed monitoring system and capacity building for remediation of uranium mining legacy sites in Central Asia”** leading by ENCO company.

- EC invited CGULS to provide reviewing and comments for EC REG 4.01/10 project aiming to assist in developing project implementation strategy to avoid duplication and synergy resources.

- During 2014-2015 CGULS Secretariat shared available information on Site characterization, on the Monitoring program development concepts and Recommendation for improvement needed in Regulatory provisions.

  **Key topic of discussions - how we may harmonise the approaches for regional and site specific monitoring programs need to be established in a region and what is an optimal set of Regulatory provisions.**
The hydrological monitoring network in Uzbekistan does not at present cover areas of the U-legacy and U-production sites.

The only 2 existing water quality monitoring stations are located at the areas affected by Jangiabad and Angren U-legacies (River Dukent-Say).

The trans-boundary monitoring stations are in plan to be established on Mailuu Suu River (down stream of KIG-UZB border and also on river Syr-Dariya downstream of TAD-UZB border were recommended.

No- water bodies at the main U-Production area (Navoi, Uchkuduk)

Aerosol monitoring network around UPLS is under development in UzHydromet

Uranium production sites in Uzbekistan and UzHyrdromet observational monitoring network
Tajikistan - site specific and regional monitoring aspects

Hydrological river’s network in Tajikistan
The only 3 water observational stations on Syr-Darya River in Sogdy Region are reasonable to be included in a regional water quality monitoring program, which have affected by UPLS, and have trans-boundary concerns.
Analytical capacities building. Assessment and Development

• Although significant progress has been made by the Governments and IAEA to establish an appropriate monitoring and analytical infrastructure in assistance Operator and Regulator of the UPLS, the absence of a Government supported National Monitoring Programs for Legacy Site is apparent.

• None of the Laboratories in the Region are sufficiently equipped and ready for proper implementation of the site specific Hazards Characterization, Monitoring and Surveillance Programs

• National cooperation actions and coordination actions are needed to combine capabilities and synergy efforts to implement Site specific monitoring programs. At least one key analytical laboratory in every affected MS need to be established with sufficient Government Support for operational expenses of the laboratories in the frame of Programs prepared by CGULS experts.

• The estimated cost to make fulfilment of the missing analytical capacities estimated need to be invested for every affected MS is estimated as 300-350 kUS$ as an additional international technical assistance.

• However any further financial support and technical assistance for training of personal in CA countries will not be efficient and sustainable if no National Support and National Strategy to defend international efforts to be done for capacity building development.
To reinforce regulatory framework by supporting national and international initiatives as appropriate

• Assistance provided with the set-up of efficient regulatory processes, including the development of regulations and regulatory guidance and procedures. Work on this deliverable is still on-going.

• Questionnaires regarding an existing regulatory framework and interest for its improvement and enhancing according the best international practice were prepared and distributed among the participants. Responses are currently being analysed.

• Completion in Draft of the Summary of Regulatory documents to be proposed as an optimal mode to provide efficient Remediation Planning. These documents are ready for review by international experts.

• Expert comments on the draft of the regulatory document Sanitary Roles (Safety provision during decommissioning, re-profiling of the Enterprises belonging TVEL Ltd Company” (Uranium ore processing enterprises) in Russian Federation) have been submitted to EurAsEC.
Draft documents, originally developed with EC experts for the Ukraine, are being revised by international experts in support of Requirements on Remediation of Uranium Mining and Processing Legacy Sites

- Part 1. Principles and Criteria
- Part 2. Development of Remediation Plans
- Part 3. Development a Radiation Protection Program
- Part 4. Site Characterization Principles
- Part 5. Monitoring and Surveillance Programs Planning
- Part 6. Safety Assessment
- Part 7. Management of Remediation Wastes
- Part 8. Site Management Qualification of Personnel and Training Requirements
- Part 9. Application for a License to Remediate

It is expected that by the end of 2014 these documents will be ready for first evaluation and to be presented in June 2015 as Final draft.
Key Actions Planned for 2015

- Prepare and implement the Annual CGULS Coordination Meeting (Dushanbe, June 2015)
- Develop and populate the CGULS web-page with developed concepts and project related materials
- Two joint meetings: the CGULS Coordination Working Group for Taboshar and for Minkush are planned.
- International review and evaluation of the Minkush and Taboshar UPLS remediation Strategy (Q2-3 2015).
- CGULS regulatory experts group meeting in Vienna (Q2 2015)
- Revise version of the UPLS Guideline documents will be ready before CGULS Annual meeting in Dushanbe as a draft for distribution (Q3 2015)

Conclusions - 1

- A uranium legacy site coordination group has been established and is functioning

- Technical Exchange and communication is occurring where it had not before (Member States, national and international organizations)

- A clear understanding of the current analytical capability in the region with recommendations for improvement

- Initial radiological surveys and assessment were provided by CGULS experts on the request of Government of Kyrgyzstan, Kazakhstan and Tajikistan aiming provide assistance to EC and EurAsEC in data collection and independent expertise of the proposed Remediation strategies.

Prioritized list for further Remediation Preparedness and Implementation actions need to be implemented in Kyrgyzstan (Mailuu Suu), and Kazakhstan were elaborated
Conclusions - 2

• Provided recommendation for further Analytical and Training capacity improvement and also actions to be done by Regulatory Bodies and Site Operators in establishing Site specific Monitoring and Surveillance Programs were developed and submitted to the CGULS partners.

• The Optimal set of regulatory requirements and guidelines to be recommended for adaptation and application in Remediation practice is under development now.

• National CGULS point of contacts is needed in each MS.

• More cooperation at the National and International levels are expected.

CGULS activities will bring real benefits to the MS affected by UPLS and International Communities involved in the process for preparedness and implementation of the Remediation Programs.
Thank you for cooperation

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